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PART VII.] [PRICE 2s. 6*d*.

A
HISTORY
OF
BRITISH FOREST-TREES,

INDIGENOUS AND INTRODUCED.

BY

PRIDEAUX JOHN SELBY, F.L.S., M.W.S., ETC.

ILLUSTRATED BY A WOODCUT OF EACH SPECIES,
AND NUMEROUS VIGNETTES.

WISDOM OF GOD IN CREATION.

LONDON:
JOHN VAN VOORST, 1, PATERNOSTER ROW;
BOOKSELLER TO THE ZOOLOGICAL SOCIETY.

S. BENTLEY, [1*st*. *Jan*. 1842.] SHOE LANE.

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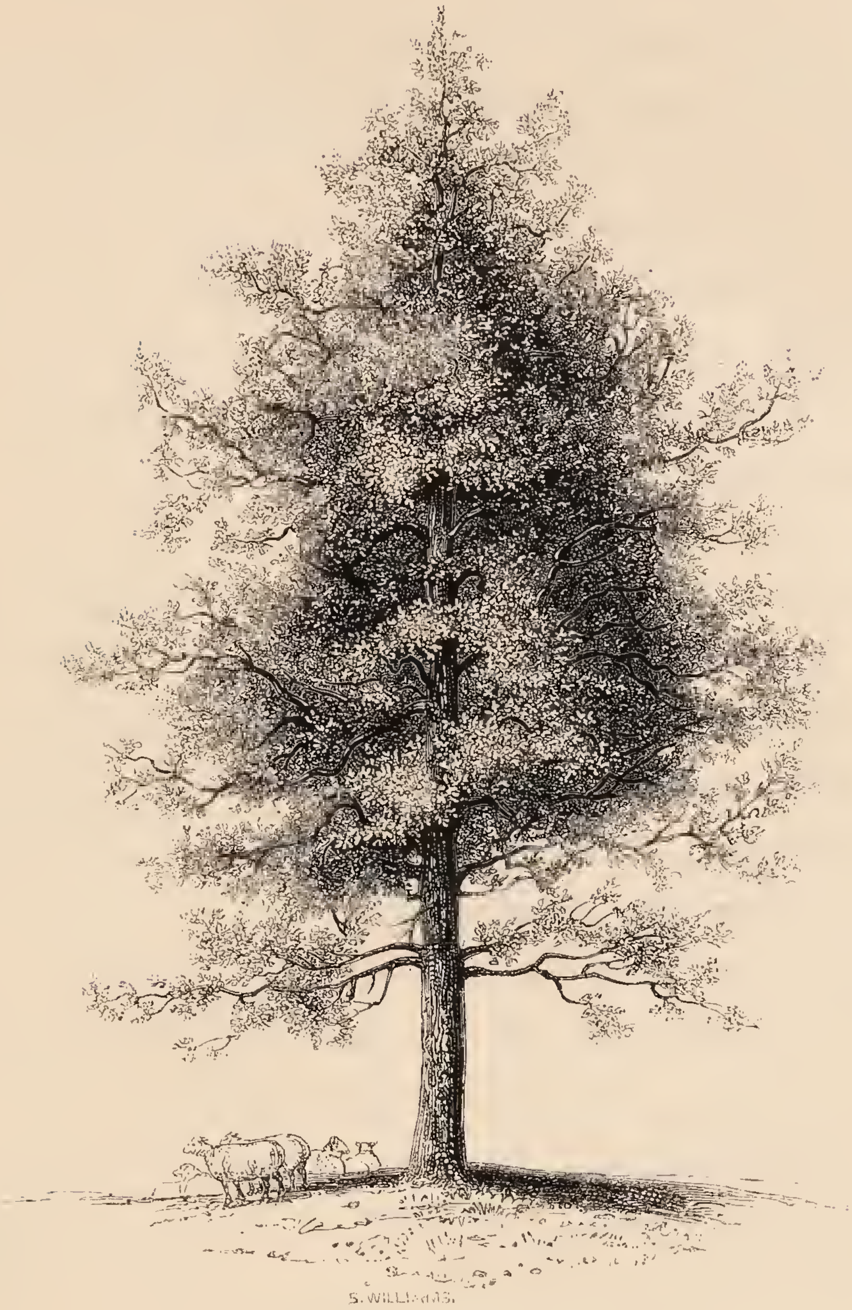

Quercus Cerris. Linn.

TURKEY, OR MOSSY-CUPPED OAK.

Quercus Cerris, Linn. sp. pl. 1415.
Willd. No. 75.
Loudon's Arb. Brit. p. iii. ch. cv. p. 1846.

The Turkey Oak is specifically distinguished by oblong, deeply-lobed, and sinuated leaves, with short petioles and hairy beneath, the lobes lanceolate, acute, and somewhat angular. The buds surrounded with long linear stipules which spring from around their axils. The calyx or acorn cup echinate, or armed with bristly scales.

A century, it appears, has now elapsed since the first introduction of the Turkey Oak into Britain, and though it grows with great rapidity and vigour, bearing, with perfect impunity, our severest seasons, and thriving upon soils of middling and even inferior quality, it has not hitherto met with that encouragement it appears to deserve both as an ornamental addition to our sylva, and as a useful and profitable timber tree. It is from a conviction of its importance in the latter point of view, and supported by the high opinion such writers as Matthew, Bosc, &c., entertain of its valuable qualities, that we admit it into the present work, being anxious, if possible, to bring it into more general cultivation, and to see it take the place of some other trees of less merit in our mixed plantations, particularly in those where the British Oak is intended to form the final crop. Thus, instead of the Wych elm, the beech, and in most cases the ash, which, for the last forty or fifty years, have been planted with too liberal a hand in

most of our plantations, and all of which, from their habit and mode of growth, are inimical to the progress of the Oak, we would recommend, in their stead, the free admission of this tree, as it is not only a less injurious neighbour to its congener, but grows as rapidly, perhaps even more so than any of those above-mentioned, and would, within the first thirty years, return as great a profit by its thinnings, which make excellent barrel staves, and are applicable to various other purposes; when large, or at its prime, which is at seventy or eighty years of age, it would produce a wainscot for cabinet and other internal work, superior in beauty and appearance to that of the common Oak, and, if kept dry, equally as durable.

It may, perhaps, be objected to such an extensive cultivation of the *Cerris*, that plants could not at present be procured from the nurseries in sufficient numbers, or that their cost would not permit of their being used to the same extent as the Wych elm, ash, &c. To this we answer, that there is little doubt but that the supply would increase with the demand, and that means would be taken by the nurserymen to procure whatever seed might be required, if not at home, at least from the Continent, where the tree abounds, and that an extensive sale and steady demand would soon reduce the price of plants to a rate that would allow them to be introduced in any proportion required.

The Turkey Oak, in its mode of growth, differs greatly from the British species, for, even as a single tree, it generally shoots up to a great height, with a straight continuous trunk to which the branches are subordinate, rarely divaricating, or throwing out such huge limbs as the common Oak.

The branches, also, which are remarkable for their expansion, or gibbosity at their junction with the trunk, generally at first take a more upright direction than those of the common Oak, and, from the position of the buds and mode of growth, are at all ages destitute of that angular and tortuous appearance which characterizes the branches and spray of the common Oak: it therefore usually retains a pyramidal form, and on this account is better adapted, and a more appropriate tree to plant with the common Oak than those we have already alluded to.

The leaves, which are generally persistent in a withered state during winter upon young trees under fifteen or twenty years old, vary greatly in form upon different individuals; they also vary considerably in their colour, in the common or typical shape, being of a fine bright shining green above, and slightly glaucous beneath, in others of a deep green and still more glaucous on the under surface, frequently also approaching in form to those of the hybrid sub-evergreen varieties, *Quer. c. Fulhamensis* and *Quer. c. Lucombiensis.*

The foliage is usually abundant and in fine tufted masses, and the contrast of colour of the two sides of the leaves often produces a sparkling and brilliant effect; this, together with the large size it attains, and its well-balanced form, renders it a very handsome and ornamental tree, though it can never boast of the picturesque appearance possessed by the British species. It grows rapidly, and with great vigour, even in soils of inferior quality, and is found to thrive upon those of a sandy, as well as those of a clayey nature, and even where the latter has been of a cold retentive quality we have noticed it making a progress beyond that of any hard wood tree planted in its company. Upon good wood land, or soil adapted for the Oak, it frequently makes a leading annual shoot during the first twenty years of its growth of more than two feet, and at Twizell we have young trees which, at eighteen and twenty years old, have attained a height of thirty and thirty-five feet, and a circumference of two feet six inches at one foot from the ground. At Stanwick, Yorkshire, the seat of Lord Prudhoe, there is a beautiful *Cerris* which measures upwards of eleven feet in circumference. As might be expected, from its more rapid growth, the duration of the *Cerris* falls far short of that of the Oak, and it is accounted to be at its prime, or at the fittest age for felling, when sixty or seventy years old. After this period the timber is apt to get shaky, and then begins to decay at the heart.

Hitherto the quality of the British grown *Cerris* has been but seldom tested, few trees having yet attained sufficient age or dimensions for felling. We have, however, an account of two cut down at East Hampstead, in Berkshire, a seat belonging to the Marquis of Downshire, the wood of which was made into doors for some of the principal apartments. Mr. Atkinson,* who gives the account, pronounces the grain to be much finer than that of British Oak, also that it takes a better polish, and is more beautiful than any other Oak wood he had ever seen; the same gentleman, in testing its properties with those of the common Oak, found, that though not quite so strong, it was as tough as native Oak, although the specimen submitted to trial was not of the best quality, but rather cross-grained; and he adds, "for all ornamental purposes where the wood has to be polished it is superior, and must be a profitable tree to plant, as it grows much quicker than our common Oak, and I have seen it thrive rapidly in poor land."

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* "Hort. Trans." second series, vol. i. p. 338.

From further information obtained by Mr. Loudon from the Marquis of Downshire, its inferiority to the Oak is principally observed in its greater liability to decay when exposed to weather, or in situations where it is alternately wet and dry; in all others, it is considered scarcely inferior to the wood of English Oak. Upon the Continent it would appear to attain a still greater degree of perfection, as we learn from Bosc and other writers that the wood is good for all purposes, and that in the south of France it is even preferred to any other for ship-building. At Constantinople, also, it is used for naval timber, as well as for the frame-work of houses. This use of the *Cerris* timber, in situations where it must be exposed to the vicissitudes of weather, would imply that, grown in a warmer climate, it brings its wood to greater perfection, and endued with superior protecting qualities than it possesses when reared in a higher latitude; and this agrees with the statement, that the wood of the *Cerris* in the south of France is much harder and more durable than that produced in the northern parts of the same kingdom.

But inferior as the *Cerris* timber grown in England may be in some respects to the British Oak, it is still well worth cultivating for the beauty and excellence of the wainscot it produces, as well as for other purposes to which it is applicable, as staves, joists, beams, &c.; added to which its rapid growth ensures an early profit, at the same time that the beauty of its form and foliage greatly contributes to the decoration and effect of our landscape scenery.

The *Cerris* is a native of the middle and southern parts of Europe, and also extends its range to a portion of Western Asia, being indigenous throughout the greater part of Asia Minor and Syria. The species is propagated by the acorns, which are borne in abundance after the tree has attained a certain age, and are frequently ripened even in the north of England. The varieties, however, which are numerous, must, in order to prevent further sporting, be continued by grafting, which is done by the slip method upon stocks of the species, or those of the common Oak, and the closer to the ground the graft can be placed upon the stock the better, as it succeeds much more readily when the earth can be heaped around it, so as to leave not more than a single eye or bud exposed.

Plants raised from the seed succeed best if twice transplanted during their stay in the nursery before they are finally removed, as their lengthy tap root generally having a portion cut off in the operation, throws out a greater abundance of lateral roots, a circumstance greatly in favour of their success. The pitting mode of planting must be pursued, as the length and size of the roots prevent their easy insertion by the T or slitting method.

Amongst the varieties of the *Cerris*, the *Quer. c. pendula*, weeping Turkey Oak, seems one of the most beautiful and best deserving of culture; a fine specimen of this variety, now forty years old, growing at Hackwood Park, is figured in Loudon's "Arb. Brit." The *Quer. c. Austriaca* is another well-marked variety, and a native of Austria, Hungary, and other parts of Europe, and to this *Quer. c. cana major* and *minor* seem nearly allied. But the finest and most desirable varieties, in an ornamental point of view, are those sub-evergreen kinds known by the names of the Fulham and Lucombe Oaks. Of the origin and age of the first nothing precise seems known, except that it is supposed to have been raised at Fulham, from seed. It is a fine, broad-leaved, sub-evergreen variety, with a large branching and rounded head, and a bark slightly corky or rough. The original tree, at the time the "Arboretum Britannicum" was published, measured seventy-five feet in height, with a trunk three feet ten inches in diameter at three feet from the ground, the branches covering a space of fifty-four feet in diameter. In favourable seasons this tree produces abundance of acorns, from which many plants have been raised; these, as might be expected, produce a progeny varying greatly in the form of their leaves, but most of them retain their evergreen character in a greater or less degree.

The Lucombe, or Exeter Oak, is also a sub-evergreen, and was raised by Mr. Lucombe, a nurseryman at Exeter, about 1762, from acorns of the common *Cerris*, which grew in the nursery, and near to a specimen of *Quer. suber.* (cork tree), by whose farina it is supposed the blossom of the *Cerris* Oak was impregnated.

However closely in form the leaves of the Fulham and Lucombe Oaks resemble each other, these trees, in their habit of growth, are very dissimilar, as the Lucombe instead of the round-headed form of the Fulham variety, always presents a fine pyramidal outline, and the bark is also much rougher and more corky, showing its nearer relationship to the *Quer. suber.* It grows freely and with great rapidity, and in some instances has attained a height of upwards of eighty feet in seventy years. To perpetuate the original variety, it must be grafted upon the common cerris, for although it ripens acorns in abundance, these being the produce of a hybrid cannot be depended on as certain to come true to their parent. Several fine varieties, however, have been raised from its acorns, some of which show a still nearer approach to *Quer. suber.* than the parent tree, the bark being still more corky, and the evergreen character more permanent. Others again revert to the female parent of the Lucombe, and assume the character of the common *Cerris*. The original tree reared by Lucombe, after he had propagated from it extensively, was cut down at the age of twenty years with the intention of having his coffin made out of it. Loudon adds, that he lived so much longer than he anticipated, that several years before his death he had a much larger and older tree cut down, sawn into plank, and carefully deposited under his bed, in readiness for the above purpose.

The wood of the Lucombe Oak is of close texture and very beautiful grain, and no doubt would be very valuable for cabinet work. Some of the varieties produced from its acorns, are also, from Mr. Pine's report, likely to be well worthy of extensive culture, as they grow rapidly and will thrive in bleak exposed situations, even where the common Oak and elm do not succeed. The finest specimens of the Lucombe Oak are said to be those at Killerton near Exeter, the seat of Sir T. Dyke Acland, Bart.; noble trees of the same variety also adorn Carclew, in Cornwall, the residence of Sir Charles Lemon, Bart.

Quercus Ilex. Linn.

EVERGREEN, OR HOLM OAK.

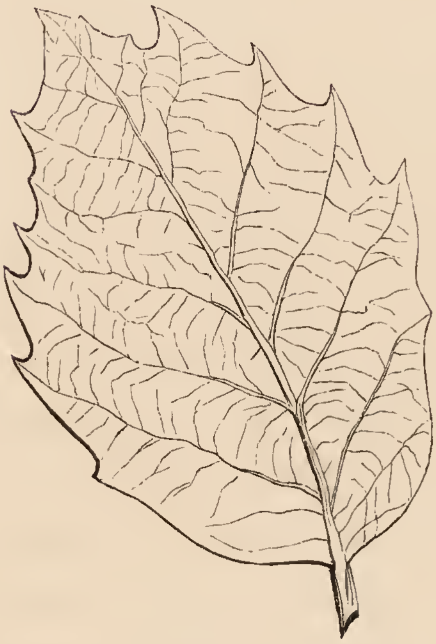
Quercus Ilex,
Linn. sp. pl. 1412.
Aiton's Hort. Kew. v. p. 289.
Nov. du Ham. vii. p. 156.
Loudon's Arb. Brit. part III. ch. cv. p. 1899.

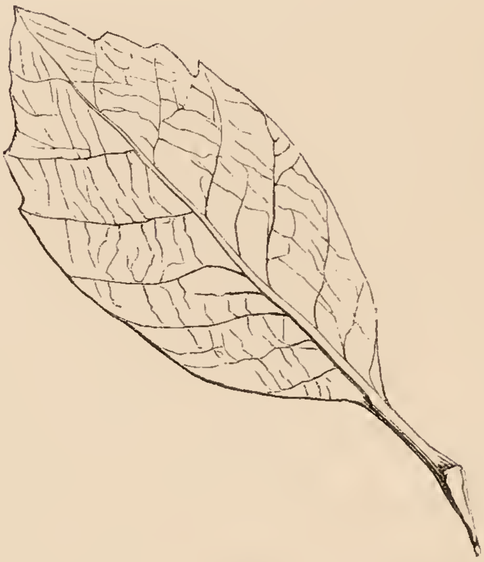
Of the various species belonging to the evergreen section of the genus *Quercus*, the common Ilex, or Holm Oak, is the only one that has been cultivated to any extent, or, indeed, that will grow freely throughout the greater part of the United Kingdom, for although some fine specimens of other species, as *Quer. suber* (Cork tree), *Quer. esculus*, *&c.*, do exist in the south of England and in Ireland, in warm and sheltered situations, they are of too tender a nature to brave the vicissitudes of our climate, unless thus protected, and can never become available, either as ornamental or as timber trees, in ordinary situations. Even the Ilex, in some of our very severe winters, is so far affected as to be deprived of its leaves, as was generally the case during the inclement winter of 1837-8, which proved so destructive to the evergreens and tender acclimated plants throughout the kingdom. The Ilex is a native of the southern parts of Europe, being indigenous to Italy, Spain, and the south of France, and it also extends its range into northern Africa and some parts of Asia. Its power of occupancy does not appear to be great, as it is rarely met with in forest-like masses, but dispersed here and there, singly, or in groups. It also affects maritime regions, where it always thrives with greater vigour, both in its native habitats and in Britain, than in districts removed further inland.

It is a tree of extraordinary duration, and, though its increase after a certain period is slow, it remains in a growing state for many centuries. Pliny, in his memoranda of the Ilex, makes mention of some trees growing in his time, of a greater age than Rome itself, and which at the lowest computation must at that time have been fourteen or fifteen hundred years old. Its first introduction into England appears to have been about the middle of the sixteenth century, or upwards of two hundred and sixty years ago, as it is mentioned by Gerard; and Evelyn, in 1678, speaks of an Ilex growing in the king's privy garden at Whitehall, as "a sickly imp of more than fourscore years' growth." Since that period, as a desirable evergreen and ornamental tree, it has been planted very generally in pleasure grounds, and in many instances has attained a fine timber-like size; such are some of those mentioned by Bradly, as originally planted by Robert Ball, Esq. of Minehead, Devonshire, a late account of which is given in the eleventh vol. of the "Gardener's Magazine," and the dimensions of three of the largest are there stated. One of these was found to be eighty-five feet high, with a trunk eleven feet in circumference; the second seventy feet high, the circumference of the trunk fourteen feet; and the third, a tree inferior in height but of greater bulk, being fifty-five feet high, the circumference of the trunk as much as twenty-two feet. In the north of England, and even in Scotland, it thrives well, as may be collected from the statistics of the Ilex contained in the "Arboretum Britannicum." In Northumberland there are fine thriving specimens, of thirty and forty years' growth, at Howick, the seat of the Earl Grey, and two very fine trees at Falloden, the seat of General Sir H. Grey, of one of which our figure is a portrait; this tree is about forty-five feet high, with a trunk seven feet four inches in circumference at two feet from the ground, and a diameter of head of thirty-six feet, but it covered a much larger space previously to a storm of wind a few years ago, which tore off one of its main limbs. The other is not so high, but it covers a much larger space of ground, the diameter of the spread of the branches being upwards of seventy feet, the circumference of the bole at one foot from the ground eleven feet. Both of these trees are within the influence of the sea breeze, and we find that at Twizell, which is similarly situated, its growth is tolerably rapid and promising. In Cornwall it is planted extensively, not only for its beauty as an evergreen, but as the best shelter upon the coast for the common as well as the Mossy-cupped Oak, and its endurance of the sea air is strongly exemplified by the healthy appearance of those planted on St. Michael's Mount. At Goodwood, near Chichester, there are many Ilex's upwards of ten feet in circumference at three feet from the ground.

The Ilex thrives best on a deep dry soil, though it also makes good progress in a stiffish loam, provided it be not wet bottomed, which is always injurious to its large deep-descending roots. It is propagated entirely by acorns, which are procured from abroad, or, in fine seasons, from trees in our own country, and the plants are either raised in beds in the open air, or in pots; we recommend the latter method, as the young trees suffer no mutilation of the root, and can at any time be turned out with a certainty of success, whereas, when raised in the open ground, they are, from the nature of their large, naked, carrot-like roots, very difficult to transplant, unless great care has been taken to move them frequently in the nursery, and thus force them to throw out lateral rootlets. Some years ago, we succeeded with scarcely the loss of a plant in transplanting a number of Holm Oaks raised from English-grown acorns; this was effected by nursing them in a stiff loam, and checking the downward direction of their roots by moving them every other year till finally transplanted. The Ilex, when left to its natural growth and fully exposed, is frequently furnished with branches from the very ground, and acquires, as Loudon remarks, the character of an immense bush, rather than that of a timber tree. It may however, by a judicious application of the knife, be made to assume a handsome form, with a fine straight trunk, and the same effect is usually produced by planting it in company with, and allowing it to be drawn up by, other trees.

The foliage of the Ilex is of a very deep glossy green, the under surface of the leaves being more or less glaucous in different individuals. The leaves themselves vary greatly in form, and in a small seed bed we have had several distinct varieties; in some they are large and broad, with notched or undulated margins, in others they are prickly, like those of the common holly, and in others, again, they are narrow, with plain and, sometimes, with serrated edges. In short, the modifications of form they assume are so marked and distinct, as to have given rise to several named varieties, and it is even supposed that some of the evergreen Oaks which rank as distinct species are nothing more than varieties of the *Quer. Ilex.*





The catkins of the male flowers, which spring from the axils of the leaves of the preceding year, near to the extremity of the branches, are about one inch and a half in length, the calyx is campanulate, the stamens six, with filaments twice the length of the divisions of the calyx. The female flowers, from four to eight in number, are sessile upon a common peduncle, which arises from the axils of the leaves of the same year, and the acorns are not ripe till the autumn of the second year. These vary in size and shape upon different trees, and the cup is closely imbricated with small scales. The acorns of the Ilex are generally harsh and bitter, and not eatable, like those of its near congener the *Quer. Grammuntia*, whose fruit is little, if at all, inferior to the finest chesnuts. The heart or matured wood of the Ilex is of a very close texture, extremely hard and heavy, weighing as much as seventy pounds the cubic foot. It is of a brown colour and takes a fine polish, but is subject to split and twist in drying. It is very durable, even when exposed to weather or the alternation of dryness and moisture; and, as its lateral and longitudinal adhesion are considerable, it possesses a flexibility sufficient to render it an excellent material for the handles of hatchets and other tools, as well as for many purposes where great strength and resistance to friction are required. Du Hamel recommends it as a ship timber, but its weight and usual want of scantling are against its employment in naval architecture. It makes an excellent and lasting charcoal, and we learn from Captain Cook's (now Widdrington) "Sketches in Spain," that in Castile the Evergreen Oaks or *Encinas** constitute the only fuel the inhabitants possess, and that the supply is rapidly decreasing from the improvident habits of the peasantry, whose practice it is "to level the whole tract which they attack. The consequence is, that there is a tolerably vigorous spring from the stocks, this is soon cut, when a more feeble spring takes place, and is again levelled, after which operation being repeated a few times, every remnant is annihilated, and the country reduced to the open waste it now exhibits."

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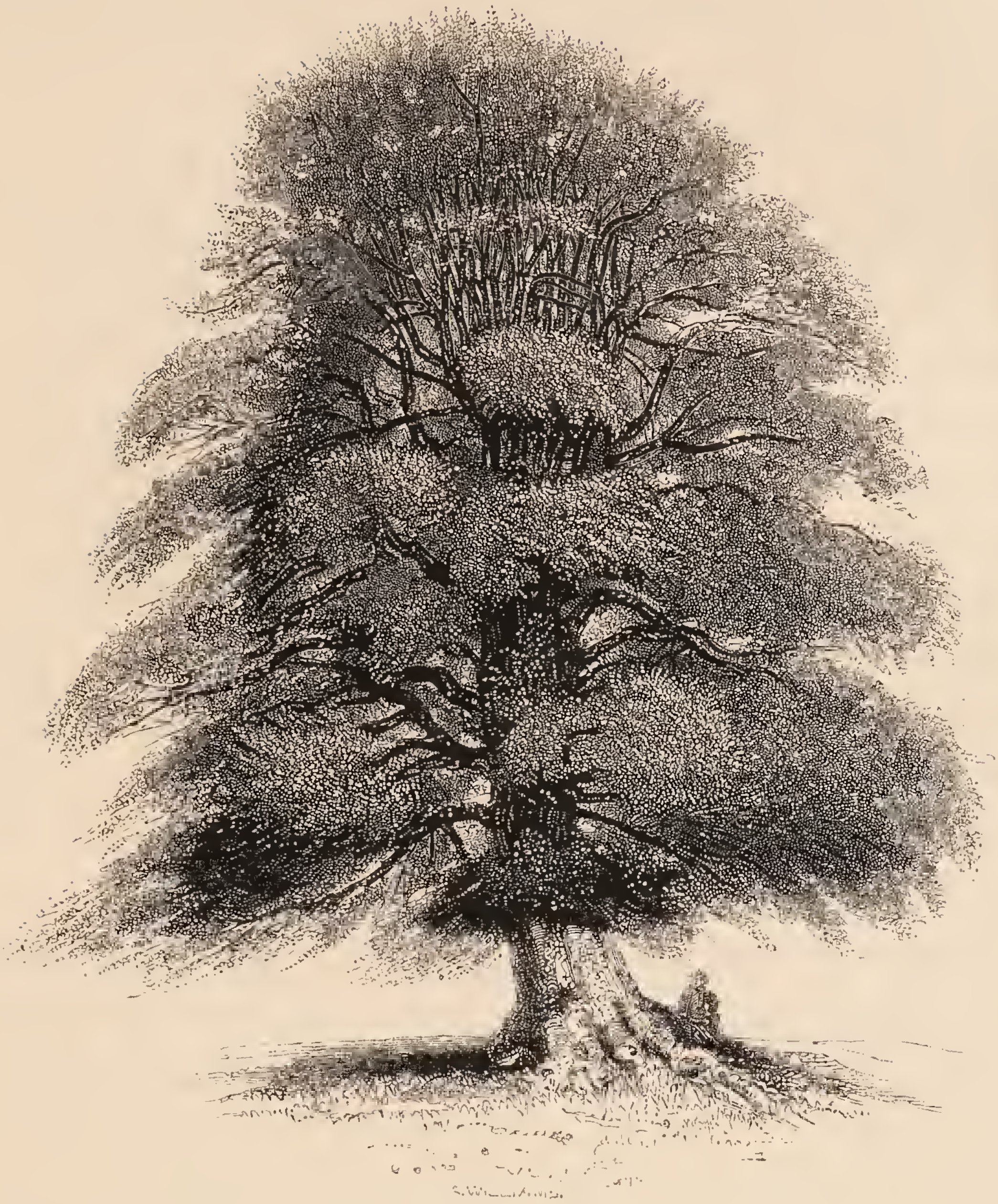
* In Spain, *Encina* is the name by which the *Quer. I. Grammuntia* of authors is designated; the other species have each their distinct appellations.

The bark of this species, like that of its congeners, contains a large proportion of tannin; it is thin, hard, and slightly cracked in old trees, but never corky. Upon the whole, the Ilex must be considered in this country an ornamental rather than a forest tree, though, at the same time, we would wish to recommend its adoption upon a more extensive scale than has hitherto prevailed, especially upon the sea coast, where it not only grows with vigour itself, but also serves the essential purpose of nursing and protecting other kinds of timber.



Genus *Fagus*, Linn.

Linn. *Syst. Monœcia Polyandria.*

Fagus sylvatica. Linn.

COMMON BEECH.

Fagus sylvatica,

Linn. sp. pl. 1416.
Willd. sp. pl. iv. p. 459.
Smith's Eng. Flor. iv. p. 152.
Hooker's Brit. Flor. ed. iii. p. 411.
Mackay's Flor. Hibern. p. 254.
Lindl. syn. p. 239.
Loudon's Arb. Brit. p. iii. ch. cv. p. 1950.

The specific and distinguishing characters of the Beech are, leaves ovate, obsoletely serrated, and ciliated on their margins. Prickles of the outer calyx simple. Stigmas three.

The Beech is a tree of the first magnitude, frequently vieing in dimensions with the oak, the ash, and the chesnut; its usual form, when growing singly and not drawn up by other lofty trees, is that of an expansive round-headed tree, the stem, below the divarication of the greater limbs, generally short, the head crowded and composed of many branches, which at first form acute angles with the stem, but in old trees frequently bend in the middle and again curve upwards at the extremity; and it not unfrequently happens that, in close-headed trees, where the branches cross and come in contact with each other, a junction or natural inarching takes place. In mass, and growing pretty close together, it runs up to a great height, with a clean straight stem, the lower branches either dying gradually off, or so much checked in their growth as not to interfere with the cleanness of the timber.

The bark, even upon the oldest trees, is thin and smooth, and, when fully exposed to the light, of a pearl, or silvery grey colour.

The leaves are thin in texture, and, when matured, of a deep shining green; in autumn they change to a rich orange brown, and, during the youth of the tree, are usually retained over the winter, or until the sap begins to move in the ensuing spring.

The male catkins, or barren flowers, are of a brown colour, round-stalked, and drooping; the fertile ones, placed on the branch above them, are solitary and on shorter stalks. The calyx of the fruit is four cleft, covered with simple pliant prickles; the stigmas, three in each flower, spreading, acute, and downy. The nuts are two, each with three very sharp angles, and crowned with the inner calyx. These ripen in autumn, and generally fall from the calyx, (which bursts open at the upper extremity and remains attached to the branch,) in October and November, and are commonly known by the name of beech mast. They contain a sweet, oleaginous kernel, of pleasant flavour and not unwholesome quality, and amongst animals are a favourite food of swine, deer, badgers, squirrels and dormice, while

they are also greedily devoured by ring-doves, wood-pigeons, and pheasants. In France an excellent oil is expressed from the nuts, which is not only used for the lamp, but for culinary purposes. When carefully prepared, for which approved directions will be found in the "Arboretum Britannicum," it is said to be scarcely inferior to the best olive oil, and has that further advantage, that it produces no unpleasant smell in burning. In England, the only advantage derived from the mast is as a food for swine and poultry.

The roots of the Beech extend to a great distance, and run near to the surface, contributing, with the drip and shade of the tree, to the barrenness of the soil within their circuit.

For the first few years after planting, the Beech is of slow growth, but when once firmly rooted makes rapid progress, and in the course of seventy or eighty years, at which age it is considered to have attained its prime, is frequently from seventy to ninety, or even a hundred feet high, with a trunk as much as twelve or even sixteen feet in circumference. It continues to thrive for more than a century afterwards, and then begins to decay, which process goes on at a rapid rate, as the wood is of a more perishable nature than that of the oak and some other trees.

The Beech is generally allowed to be indigenous to England, and our oldest writers mention it as one of the four aboriginal timber trees of the island. Its limit, however, as a native, seems to be confined to the dry calcareous districts of the central parts of England, or that great ridge of chalk hills which occupies a large portion of several midland counties. In these it frequently occupies extensive tracts as a natural forest, to the exclusion of all other kinds of timber;* for its power of occupancy, where the soil is congenial, conjoined to its deep shade and deleterious drip, is such as to prevent the interference or growth of any other tree. In Scotland and Ireland it is not indigenous, and according to Dr. Walker was not planted in any quantity in the former till between A. D. 1540 and 1560, and about the same period its first introduction into Ireland is supposed to have taken place. In both these countries, where the soil is congenial, it arrives at as great perfection and attains as great a size as it does in England, as we have ourselves observed in different parts, and as may be collected from the statistics of the Beech in the "Arboretum Britannicum."

Its distribution throughout the temperate parts of Europe is extensive, and it reaches as far north in Norway as 59°, and in Sweden to 58°. It is also found in Asia Minor, Palestine, and other Asiatic districts. On the Alps it seems that between latitudes $45\frac{1}{4}°$ and $46\frac{1}{2}°$, the line of Beeches rises to the height of 5142 feet, the snow line being 3848 feet higher; they occupy the southern slopes of the mountains, the northern of the same zone being generally clothed with the silver fir.

From the description given by Pliny of the Roman Fagus, in which the form of the nut is particularly noticed, as well as the appropriate epithets Virgil has applied to it, there is little or no doubt but that our common Beech was known in Italy by that name, although it might not have been restricted to the species; a supposition some have been led to form in consequence of the passage in "Cæsar's Commentaries," where it is said that no Fagi were found in Britain. It may also, to the readers of the present day, appear somewhat extraordinary that Pliny and Virgil should talk of grafting the Beech upon the Chesnut, or that the fruit of the latter should in their day be considered inferior to the mast of the Beech.

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* In America the Beech appears to have the same exclusive power of occupancy; the Beech forests, where they do occur, being entirely composed of this tree.

Few, we believe, who peruse the pages of "Gilpin's Forest Scenery," will be found to coincide in that author's estimate of the ornamental properties of the Beech, or who will not think that he has overlooked many circumstances, connected with this tree, which, though not exactly adapted for representation by the pencil, or wanting in those peculiar characters which are considered to constitute the picturesque, are, nevertheless, in themselves objects of interest, and calculated to produce, under certain circumstances, the most pleasing effects. It is, however, from the light in which natural objects were almost invariably viewed by the gifted author of "Forest Scenery," that we must attribute that apparent want of interest he seems to have felt and entertained towards individual objects, when not connected with the art of composition; for such was his love and admiration of the pencil, and so closely interwoven were all his feelings and associations with it, that they threw into the background, and out of view, all other qualities and accidents when these could not be made available, or were repugnant to the rules of composition.

Sir T. Dick Lauder, in his valuable edition of this author, when commenting upon the depreciating terms in which the Beech is mentioned, has well remarked, "that this is one of the instances in which the author's love of the art of painting objects of nature with the pencil, and his associations with the pleasures of that art, have very much led him away. We are disposed," he adds, "to go along with him in a great measure so far as we, like him, draw our associations with this tree from the same source. But we conceive we have much the advantage in the pleasure arising from the contemplation of a noble Beech, as one of the most magnificent objects of God's fair creation."

To such a sentiment we give a willing assent, and though the Beech may not exhibit those characteristics which produce picturesque effect in so eminent a degree as the oak, the ash, and some other arboreal forms, still it possesses in itself many attractions and favourable accidents, whether it be in the form of a vast umbrageous tree, with a short but massive stem, such as it usually appears when growing solitary, or detached from other trees, and such as we may fancy the wide-spreading Beech of the Mantuan bard to have been; or whether it presents a straight and lofty trunk, rising amidst its neighbours like a polished column, and crowned by a canopy of the thickest foliage, such as it is when nursed and drawn up with other trees, or in company with those of its own kind, and where, as combining magnificence with beauty, it has, by an eminent writer on arboriculture, been pronounced as at once the Hercules and Adonis of our Sylva.

Whatever may be the defects of the Beech in composition, and defects we allow it to have, it possesses too many important advantages in itself to be set entirely aside, or banished from our parks and lawns. Its noble and majestic size, its umbrageous and thickly-clothed head, affording, in summer heats, a cool and welcome shade, and which, though without the tufted beauty of that of the oak, or the feathery lightness of the ash, is valuable for the depth it produces in distant scenery; the beauty of its foliage, either when matured and reflecting in gem-like coruscations, from its deep green polished surface, every play or scintillation of light, or as it first bursts from its envelopes tender in hue and delicate in texture; the smoothness as well as the light and pleasant colour of its bark, which catches and produces those sparkling lights we so oft admire in the stems of a Beechen grove, are all of them strong and powerful recommendations in its favour, and must always counterbalance its minor defects, and those deficiencies which detract from its merits as an artist's tree.

But having thus endeavoured to vindicate the claim of the Beech to protection and favour as an ornamental tree, we are not among those who would recommend its culture on an extensive scale, even in our parks and lawns, a few being at all times sufficient to produce the desired effect; much less would we recommend it to be planted with a view to profit* in mixed plantations, particularly where it is not intended to form the ultimate crop, as from its spreading growth it is a dangerous neighbour to all others in its vicinity, particularly to the oak, and its value in a young state, or before it acquires a tolerable scantling, is so trifling as not to repay for its occupancy. Again, as a single or as a hedge-row tree it is one of the worst we can plant, for, as Matthew observes, " it is the most valueless of all timber when of small size, or when it is of short or crooked stem," which is almost invariably the case when grown singly or in hedge-rows; and it is also in the latter situation, from its dense and widely-extended shade, and the deleterious nature of its drip, more injurious to the herbage beneath than any other tree:

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* In Northumberland, about fifty or sixty years ago, the Beech was extensively planted, as at that time its timber was used almost exclusively for making the train or wagon ways, belonging to the collieries. The introduction of iron rails has, however, done away with its use, and the Beechen woods are now almost valueless to their proprietors.

and here we may also remark, that one of the greatest disadvantages attending Beechen woods or groves, is, that no underwood or herbage, with the exception of some orchideous and cryptogamic plants, will thrive beneath their shade: even the hardy holly, a plant that flourishes and bears, comparatively unhurt, the drip and shade of many other trees, pines and languishes under the Beech; laurels and other evergreens, as well as deciduous shrubs, all speedily die when planted beneath its shade.

The wood of the Beech, in a green state, is hard and brittle, neither its lateral nor its longitudinal adhesion being equal to that of the oak, the ash, or the elm. When dry, it weighs about fifty pounds to the cubic foot. It possesses a heart as well as a sap wood, but the line of separation is not so visible as it is in the oak and many other trees, where the heart-wood is always of a deeper colour than the exterior or sap wood. In colour, it varies from a pale brown to white, the darkest-coloured being considered superior in quality, and the produce of the finest trees and best soil. The transverse fibres of the grain are distinctly visible, and exhibit themselves in manufactured articles, in deeper-coloured shining laminæ. Submerged, or kept constantly wet, it is very durable, and valuable for water-works, as well as for the keels and planking of vessels, for which the clean straight boles of trees that have been drawn up in company are well adapted, and recommended by Matthew. Exposed alternately to moisture and dryness, it soon rots and decays, and under cover, or kept constantly dry, no timber is more subject to be worm-eaten; articles of furniture made of Beech are generally attacked by the beetle a few years after they are made, unless protected by some process, such as varnishing, or saturating the wood with boiling oil. It is, however, very extensively used, not only in Britain, but upon the Continent. In England, a great proportion of common furniture, such as chairs, tables, bedsteads, &c., which are usually either stained to imitate mahogany, or painted in imitation of rose, and other foreign woods, are made of Beech. It is also used for panels for carriages, and for many purposes in joinery and turnery, such as planes, screws, wooden shovels; common fowling-pieces and muskets are also stocked with it, and before cast iron came into use for wheels and pinions, cogs of Beech were greatly used.*

Within a late period, it has been in demand for rail-road sleepers, and should it prove durable and answer the purpose as well as timber of a higher marketable value, the proprietors of Beechen woods are likely to derive a large profit from what was previously unsaleable and an incumbrance upon the ground.

As a wood for fuel, the Beech is considered superior to most other trees, and upon the Continent, where mineral coal is seldom used, and more particularly in France, it is consumed to an immense extent. It evolves much heat and burns with a clear flame, in a fresh as well as in a dry state, and, in both these respects is only inferior to the sycamore and the ash, being superior to the oak in the proportion of 1540 to 1497. The charcoal it produces is of excellent quality, and in Buckinghamshire Beechen wood from coppices is charred in great quantities for the gunpowder manufactories. Upon the Continent the dead leaves, which, when dry, are of an elastic and very imperishable nature, have long been used for filling beds, for old Evelyn speaks of them in Switzerland, where, he says, "I have sometimes lain on them to my great refreshment;" and Sir T. Dick Lauder, after quoting the passage from Evelyn, and speaking of the excellence of the beds in Italy, made of mattresses filled with the elastic spathe of the Indian corn, adds, "but the beds made of Beech leaves are really no whit behind them in their qualities, whilst the fragrant smell of green tea which the leaves retain is most gratifying."

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* Loudon enumerates, among other articles, Beech staves for herring-barrels. The coopers upon the eastern coast, however, do not use them, as they will not retain the pickle used in curing the fish.

As coppice or undergrowth the Beech is not of long duration, as the shoots generally cease to push after forty or fifty years, and Buckinghamshire appears to be the only county in which coppice Beech prevails to any extent. As a hedgerow tree, we have already stated strong objections to its use, both on account of the general inferiority of its timber so situated, and the injurious quality of its shade; but for narrow upright hedges, to divide or enclose nursery grounds, gardens, or even small fields, the Beech is superior to the hornbeam, or any other deciduous tree, as it not only bears the shears equally well, and may be trained to as great a height, but retains the leaves during winter, thus affording additional shelter and warmth, and giving a richness of appearance the others do not possess. The natural soil of the Beech appears to be such as is of a dry nature, either calcareous or when mixed with sand and gravel, though it also thrives well and attains a large size upon clayey loam: indeed, provided the substratum be dry, the Beech will thrive and attain respectable dimensions upon most variety of soils. At Knowle, in Kent, where a celebrated Beech is now growing, the soil is a pure sand; and at Panmure, in Forfarshire, in a clayey loam, Sang mentions Beeches ninety feet in height, with clean trunks of fifty feet. At Twizell, upon clayey loam, with a calcareous substratum, it grows remarkably well, and at Dunstan Hill, near Newcastle-on-Tyne, in a fine free loam, there are thriving Beeches, with boles from twenty-five to thirty or forty feet in height, many of which measure ten and twelve feet in circumference at the base.

The Beech, with the exception of the varieties, is propagated entirely by seed, and the mast or nuts are gathered when they fall from the trees, in the months of October and November. They may either be sown immediately, or, which we deem the preferable plan, mixed with dry sand till March or April, as, by sowing in spring, germination commences immediately, and they are thus more likely to escape the destructive ravages of mice and other vermin. The earth of the seed beds should be of a light nature, rich, and well pulverized, as the young plants are rather tender, and the seed should not have a covering of more than one inch. After remaining two years in the seed bed, they may be run into nursery rows, taking care not to prune or trim either the roots or stems too much; in these rows they may remain two or three years, when they will be large enough to put out, unless required of an extra size, in which case they should again be transplanted, increasing the distance between the plants and rows, according to the size it is intended the plants should attain before they are finally put out. The Beech requires to be planted by the pitting method, as the roots are numerous, and too large to be easily inserted by the slitting or T system. In a year or two afterwards, when the plants appear dead in their tops or are making little progress, it may be advisable to cut them over, either near to the ground or where a young and healthy shoot appears, and it is necessary to attend to their growth for some years afterwards, as no tree is more liable to throw out additional or supernumerary leaders and large interfering branches than the Beech; to these the pruning-knife must be applied, but we by no means recommend that excessive pruning and denuding of the stem advocated by Pontey and other arboriculturists; on the contrary, as more consonant with the principles of vegetable physiology, we would allow most of the side branches to remain, merely thinning out where they interfered or grew too close together, or shortening in such as appeared of too rampant a growth for the other parts of the tree; for, as Matthew well observes, "In pruning, every means should be taken to increase the number of feeders, in order that none of them may become too large, and no healthy regular feeder should be lopped off till the tree has reached the required height of stem and a sufficient top above this for the purpose of growth, at which time the feeders upon the stem, as far up as this necessary height, may be removed." We would add, not entirely, but leaving a few to break the nakedness and give value to the appearance of the stem, for we are no admirers of a Pontey-like Beech, whatever merits it may have in the eyes of the timber-merchant, wood-valuer, or carpenter.

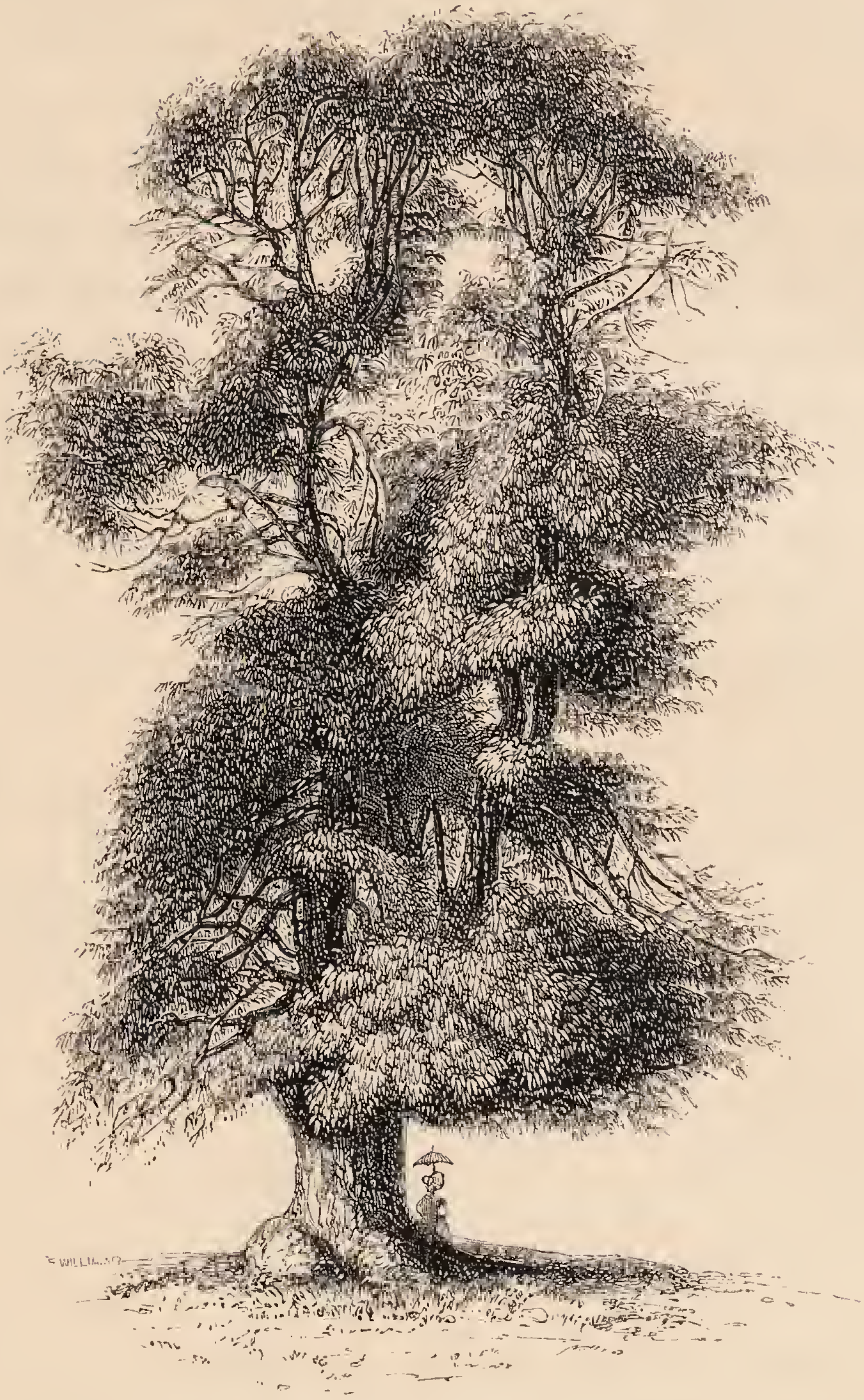
In mass, or in mixed plantations, indeed, there is little fear, from the confined situation in which they are placed, of the side branches or feeders ever attaining so large a size as to injure or interfere with the straightness and length of the bole; the difficulty, sometimes, is to keep them alive, in order that the tree may be kept in a healthy state, so as to insure a due increase of the stem. In open situations, or when standing alone, where the natural form of the Beech is that of an expansive, round-headed tree, any attempt to force it to a long, naked stem by severe pruning, can only end in producing an unsightly ill-conditioned object; under these circumstances, all that can, or ought to be done, is to remove, during youth, supernumerary leaders, or curtail branches of too exuberant a growth. The excision of large branches of the Beech, close by the bole, is always attended by bad effects, as decay is certain to extend rapidly downwards, and communicate its taint to the main body of the tree, and no branch much thicker than the arm should ever undergo close amputation.

Of the varieties of this tree, that with the deep purplish red foliage, the *Fag. S. purpurea* of the "Hort. Kew.," is one of the most remarkable and best worth cultivation, and which, when distributed sparingly and with judgement in our pleasure grounds, produces a very striking effect, from the contrast of its colour with the surrounding foliage. The original tree, which is said to be still living, was first discovered in a wood in Germany, some seventy or eighty years ago, and from it all the Purple Beeches now growing in Europe have been propagated, either by grafts or from seeds. The latter, though they frequently come true to the parent in point of colour, have also given rise to subordinate varieties, differing in the shade and intensity of the red or purple tinge, and to that more marked deviation which has received the name of the Copper-coloured Beech (*F. S. cuprea*). In England there are now fine specimens of the Purple Beech, and Loudon mentions one as the handsomest, now growing at Enville, and which, in 1831, was between sixty and seventy feet high, clothed with branches to the ground, where it extended over a space above sixty feet in diameter. There is also a variety with variegated, and another with laciniated leaves, both more curious than beautiful, and not so deserving of cultivation as some of the pendulous varieties that have accidentally occurred in different localities, such as that at Oriel Temple, in Ireland, another in Northamptonshire, mentioned by Loudon on the authority of the Rev. M. J. Berkeley, or a third that we have been informed of by W. C. Trevelyan, Esq., now growing at Craigo, in Forfarshire, a fine flourishing young tree of about thirty years' growth, and as pendulous in its character as any of those mentioned or figured in the "Arboretum Britannicum." The Beech generally preserves its form and balance remarkably well, as it is not so liable as many other forest trees to suffer from storms of wind and snow; its limbs and larger branches, from the angle they form with the trunk, presenting less leverage, and the slender nature of its spray offering much less resistance than where it is heavy and thick.

The diseases to which it is subject seem very few, for the smooth nodes often met with upon the trunk and larger branches seem in no way injurious to its health or growth. Loudon seems to think these may originate from the puncture of an insect, like the galls upon other trees; we have not been able to verify the fact, and are rather inclined to attribute them to some slight local derangement, or the extravasation of injured sap-vessels. The leaves are sometimes a little disfigured by a tufted pimple or excrescence, by some botanists considered to be a fungus, but which the Rev. M. J. Berkeley, one of the first cryptogamists of the age, believes to be a disease produced by suborganisation of the cellular tissue.

Unlike the oak, whose wood and foliage afford food to whole armies of insects, the Beech is comparatively attacked by few, its principal enemies being caterpillars belonging to the Lepidoptera. Amongst these the following are the most interesting: of the Bombyces, *Stauropus fagi* (Lobster moth), *Lophopteryx camelina*, *Petasia cassinea*, *Endromis versicolor*, and *Agläia Tau;* amongst the Noctuidæ, are *Orthosia stabilis*, and *Catocala fraxini;* and of the Geometridæ, *Himera pennaria*, *Lobophora hexapterata*, *Epione vespertaria*, *Drepana unguicula*, and *Hylophila prasinaria.* In spring, when the leaves first burst, they are frequently riddled with innumerable holes by *Orchestes calcar*, a small saltatorial weevil. *Psylla fagi*, whose larvæ and pupæ, covered like the *Eriosoma* with a white cottony substance, inhabit the under surface of the leaves, are also often very numerous.

The fungi belonging to the Beech are several, as may be seen from the list in the "Arboretum Britannicum." Amongst the most interesting is the *Tuber cibarium* (Truffle), which is found growing beneath the surface in old Beech woods, and is highly prized in cookery; *Helvella esculenta*, also, another edible fungus, and flavoured like the morel, is frequently abundant under the Beech. After the extensive list given by Loudon of the finest and largest Beech trees that have existed, or are now growing in Britain, we deem it unnecessary to occupy the time or attention of our readers with a further enumeration, more particularly as there is scarcely a district or park within the kingdom that does not possess fine and well-grown specimens: we shall only add, that a height of ninety or one hundred feet, with a circumference of stem from twelve up to twenty-two feet, is not rare among the examples given of the Beech.



Genus *Castanea*, Tournf.

Linn. *syst. Monœcia Polyandria.*

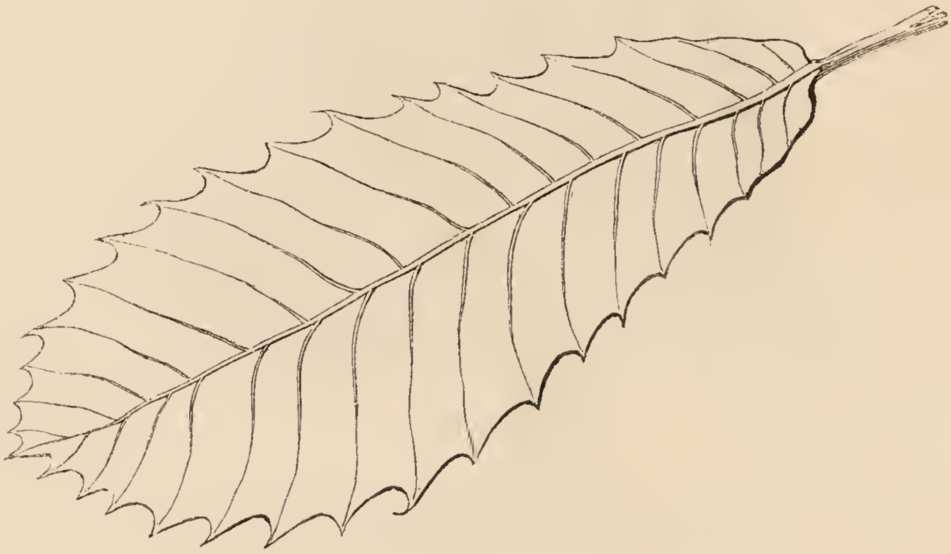
Castanea vesca. Gært.

SWEET, or SPANISH CHESNUT.

Castanea vesca,	Gært. vol. i. 181. t. 37. f. 1. Lindley's Syn. p. 171. Loudon's Arb. Brit. ch. v. p. 1983.
Fagus Castanea,	Linn. sp. pl. 1416. Smith's Eng. Flor. iv. 151. Mackay's Flor. Hibern. p. 251.

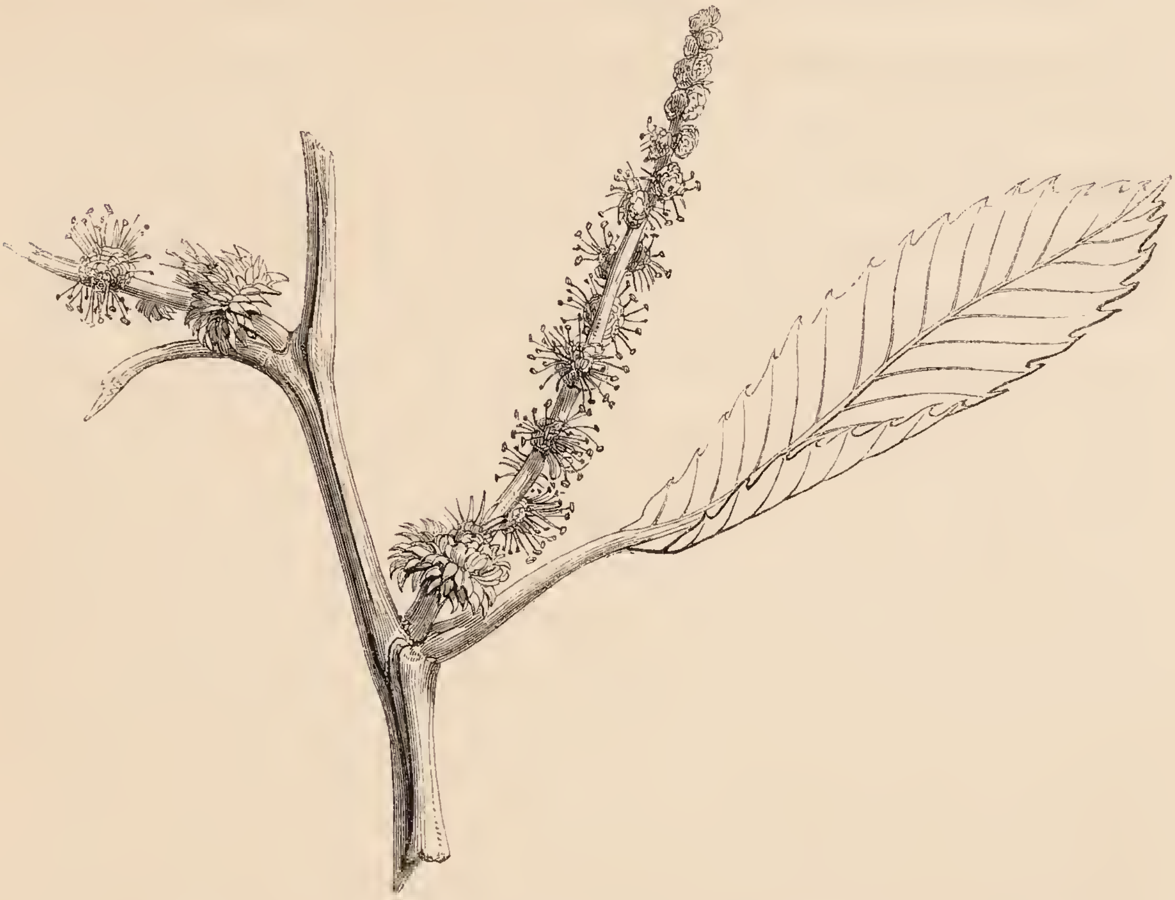
Specific characters.—Leaves long, lanceolate, deeply serrated, and acuminate, glabrous on both sides. The prickles of the calyx compound and entangled. Stigmas six.

Though the oak is usually called, and, indeed recognized as the monarch of the woods, it has a rival of formidable pretensions in the tree we are about to describe. In dimensions, and in longevity, the Chesnut seems in no way its inferior; nor do we think it less picturesque in form, or its foliage less imposing, either in richness or effect; and though the spread and diameter of the head of the Chesnut may, generally speaking, not be so great as that of the oak, its ramification is equally bold and easy, and its trunk presents a still more effective and striking exterior, from the deep and wide clefts into which the bark is split and divided. In fact, the only particular in which the Chesnut exhibits a decided inferiority, is in the quality of its timber, which, unlike that of the oak, which gains strength and durability by age, begins to deteriorate at heart, ere the tree has passed much beyond the first half century of its growth; this seems a point well ascertained and established, and not as Mr. Matthew seems to suspect, incidental to the action of climate upon the Chesnut in this country, as the timber



of this tree, even in warmer continental districts, is affected in the same manner, and at as early an age as it is in England or in Scotland.

By Linnæus and several other botanists the Chesnut was included among the beeches, *G. Fagus*, but by most of the moderns it is considered sufficiently characterized to warrant generic separation, the male flowers or catkins of *Castanea* being long and cylindrical, and the fruit farinaceous, while *Fagus*, on the contrary, has the male flowers in globular catkins and the nuts oily.



The male or barren catkins are numerous, axillary, solitary, and pendulous, of a yellow colour, and nearly as long as the leaves, the flowers in sessile tufts along the common stalk, the stamens numerous and spreading. The fertile flowers are much fewer and on terminal stalks, which lengthen as the fruit advances; the styles are about six, with long, smooth, upright stigmas. The nuts are large, broadly ovate, generally two, flat on the inner side, and attached by a broad scar to the bottom of the outer calyx, whose outside is armed with complicated sharp prickles.

In suitable soils in the south of England the growth of the Chesnut during youth is more rapid than that of the oak, and it usually makes annual shoots of two or three feet in length, and in the course of fifty or sixty years frequently attains a height of from sixty to eighty feet; northwards, it is slower, but still bears the same relative proportion to that of the oak. Its timber, however, even at this age, begins to get shaky at heart, or what is termed ring-shaken, the annual layers or circles at the centre separating from each other, and it is found to be at its greatest perfection a few years earlier. It continues, however, to live and thrive in despite of this internal disorganization for many centuries afterwards, as the enormous trees we meet with, as well as those which have been recorded, sufficiently attest; for, although decay and disruption of fibre may take place internally at the age we have stated, the tree still continues to grow luxuriantly and to enlarge externally, supported by the younger rings and layers of the woody fibre, and by its deep-descending roots, without exhibiting for many ages in its exterior any symptoms of that decay which gradually progresses from the centre towards the circumference.

By some, the Chesnut has been considered as indigenous to England, and Sir J. E. Smith, in the "Eng. Flor.," says, "that it appears to be wild in the south and west of England." The more general opinion, however, is, that it is not a native, but was introduced at a very distant period, probably by the Romans; and it is even supposed that the famous Chesnut at Tortworth, in Gloucestershire, the remains of which are still in existence, may have been planted during their sway. The belief which so long and so generally prevailed, and, indeed, we may add still partially exists, that the roofing and main beams of many of our ancient buildings and houses were framed of the Chesnut, naturally gave rise to the idea that a tree so abundant and generally distributed as it must have been in former ages, must also have been of indigenous growth ; for this supposed Chesnut timber, we may remark, is not confined to buildings in the southern and midland districts of the kingdom, but is also found in the northern counties, and even in Scotland, for Sir T. Dick Lauder, apparently not aware of the discoveries of Daubenton and others, instances the roof of the parliament house in Edinburgh, as constructed of Chesnut.*

The examination, however, and the repeated experiments that of late years have been made upon this wood, have satisfactorily proved that, in all such instances, the timber of the oak, and chiefly of the sessile-fruited kind, have been mistaken for Chesnut ; and this fact, in a great measure, does away with any argument that might otherwise have been adduced in favour of the Chesnut's indigenous origin, had the application of its timber in reality been as extensive as these ancient buildings seemed to indicate. It is also more in accordance with what we collect from the earliest of our arboricultural writers, viz., that the Chesnut in their time was by no means of common occurrence or widely distributed ; for Tusser, in 1512, enumerates Chesnuts in his list of fruit trees to be planted at a particular period of the year, and the author of an "Old Thrift Newly Revived" recommends planting the Chesnut as "a kind of timber tree of which few grow in

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* It is remarkable that the same belief of the use of Chesnut wood in ancient buildings also prevailed in France. Buffon, however, and afterwards Daubenton, showed that the timber taken for that of the Chesnut, was, in fact, that of *Quer. sessiliflora*.

England." It is, however, worthy of remark that, shortly subsequent to this period, the timber of the Chesnut seems to have been confounded with that of the oak, for Hartlib, who wrote a few years after the author of the above-named treatise, says, "in divers places in Kent, as in and about Gravesend, in the country and elsewhere, many prime timbers of their old barns and houses are of Chesnut wood, and yet there is now scarce a Chesnut tree within twenty miles of the place and the people altogether ignorant of such trees." Evelyn also fell into the same error, for, speaking of the Chesnut, he says, "I had once a very large barn near the city, framed entirely of this timber," which he supposed might have grown near this barn, as "Fitzstephen had, in the reign of Henry II., described a large and noble forest that grew on the northern side of London."

The fact is, as Buffon first observed, the wood of the oak, more particularly that of the sessile-fruited variety, assumes, in course of time, a near resemblance in colour to that of the Chesnut in its best condition, or when young and untainted at heart; and as few Chesnuts could have acquired the scantling frequently observed in the timbers of these ancient buildings at the age dialing or decay almost invariably commences, this, in itself, furnishes a strong argument against the use of Chesnut timbers and beams by our ancestors, inasmuch as the trees must have become unfit for the purpose long before they had attained the necessary dimensions. Another argument against the indigenous origin of the Chesnut is the generally received opinion that it is not even a native of the warmer parts of the European continent, such as the south of France, Italy, Spain, &c., where it nevertheless abounds and seems to grow wild, but was first introduced by the Romans from Greece, whither it had been brought from Asia Minor, of which, as well as of other parts of the Asiatic continent, it is a native. By the Greeks it was called *Sardionos Balanos* (Sardis nut), and also *Kastanea*, from the town of that name, both of which titles were adopted by the Romans on its introduction into Italy. Virgil, in his eclogues, mentions its fruit as the *molles castaneæ*, and its commanding aspect, as a tree, in the second Georgic,

——————ut altæ castaneæ, &c.

Pliny enters more fully into its history, enumerating the several varieties then existing, the difference and quality of the fruit produced, and the purposes to which the nuts were applied, together with the mode of preparing them for food. It is also a native of the north of Africa, and the species is supposed to be the same in North America.

From what has already been stated in regard to the timber of the Chesnut it is evident that, after a certain and that comparatively an early age, it becomes so deteriorated by the separation and decay of the internal layers as to be of very little value; and that for all purposes where a large scantling is required, it cannot be depended upon or come into competition with the oak and many other trees. This, however, is no reason for excluding it from our plantations, even where profit is the only object in view, for until the decay at heart actually commences the timber is of excellent quality, and for most purposes, where durability is required, equal to that of the oak, This excellence arises from the very early period at which it begins to heart or mature its wood, as well as from the very small proportion the sap bears to the matured wood, even in trees of only a few years' growth; and it is no uncommon thing to find, in trees not more than thirty or thirty-five years' old, the whole of the bole converted into heart-wood, with the exception of two or three of the outermost rings. In appearance and colour the wood bears a resemblance to that of the oak, but may always be distinguished by its want of the large laminæ (flash) or transverse fibres, which are seen in the oak, particularly when cut perpendicular on the outside, in the plane of these laminæ.

For gate and other posts, railing, spars for building, piles, and various other purposes not requiring wood of large size, it is well adapted, and perhaps as durable as any other timber we possess. It also makes excellent barrel-staves, and as an underwood produces a large crop of strong and durable hop poles, for which express purpose it is in some districts cultivated to a considerable extent, the stools continuing to throw up a succession of shoots, when cut over for a long series of years. The precocity, if we may so term it, of the Chesnut places it high in the list of those trees we deem best adapted to insert in mixed plantations, particularly where the oak is intended to form the ultimate crop; for, in addition to the valuable properties of its wood from a very early age, which, therefore, render it particularly adapted for an intermediate occupant, or one that has finally to give place and room to others, it is, from its habit and mode of growth among that class of trees least liable to injure the oak by its propinquity. In this latter respect, we consider it nearly on a par with the sycamore or the cerris oak, its growth in plantations being upright, stiff, and unyielding to the wind, the ramification thin and open, and the head tapering and narrow, rather than spreading, and this form it usually retains till of age to be cut down, which ought seldom to exceed thirty-five or forty years, as soon after that time dialing at the centre may be expected to commence. In all suitable soils, therefore, we recommend it to be planted with the oak as a secondary tree, having done so ourselves with great success, and convinced that it will repay for its occupancy as well as any other tree we could have planted. Upon the Continent the same objection applies to it as in our own climate, as it is found that decay at heart takes place at a period of its age equally early. As a timber tree, therefore, it is in no repute, and the principal use to which the wood is applied, when young and sound, is for wine casks and hoops. It furnishes a strong and good charcoal, though scarcely equal to that of the oak for domestic purposes, but considered superior to that of any other for forges, for which purpose it is much used in Spain and also in Switzerland. As a fruit tree, however, it is viewed in a very different light, and as such held in higher estimation than with us, who make but little use of the nuts as food, and seldom eat them except at dessert. In many continental parts, such as the south of France, north of Italy, Spain, &c., Chesnuts form an important article of food, and serve in a great measure as a substitute for bread, or, as compared with our diet, for the potatoe. They are prepared and eaten in various forms, sometimes plain boiled or roasted, or they are reduced to flour, which, properly secured and taken care of, will keep good for several years.

Of this flour, *la Galette*, a thickish kind of girdle cake, mixed up with a little milk and salt, and sometimes with the addition of eggs and butter, is made; *la polenta* is also another preparation made by boiling the chesnut flour in milk till it becomes quite thick; when made with water, it is eaten with milk in the same manner as oatmeal porridge in the north of England and Scotland. *Chatigna*, that is chesnuts boiled and then mashed up as we do potatoes, is also another preparation common in France and Italy, besides which there are others which may be found in Parmentier's "Traité de la Chataigne," or under the article CHATIGNIER, *Dict. Class.*

The soil upon which the Chesnut seems to attain its greatest dimensions, and to produce the best timber, is upon a loam of tolerable quality, for in very rich soils it as it were outgrows itself, and the wood is brittle and good for nothing. It also thrives well upon clayey loam, provided it be not too retentive of moisture; rocky situations are also favourable to its growth even where there appears to be but little soil. Bosc remarks, that he never saw chesnuts on soils or on surfaces adapted for the production of corn. On the mountains in France, Switzerland, and Italy, he adds, the Chesnut begins where the corn leaves off, and in climates suitable for corn the tree is only found in rocky and flinty soils. In our colder climate it requires a warmer and more sheltered situation, and a tolerable depth of soil to rear it to large dimensions; for though, as Loudon observes, it may attain great longevity and a considerable diameter of trunk in thin and gravelly soils, it never reaches any height but always retains the appearance of a pollard.

We have already stated the high estimation in which we hold the Chesnut as an ornamental tree, and in this are supported by the author of "Forest Scenery," who describes the Chesnut, at maturity and perfection, as a noble tree. This is the tree, he adds, "which graces the landscapes of Salvator Rosa. In the mountains of Calabria, where Salvator painted, the Chesnut flourished; there he studied it in all its forms, breaking and disposing it in a thousand beautiful shapes as the exigencies of his composition required." His accomplished editor also, Sir T. D. Lauder, panegyrizes it highly, and thinks that "it is, perhaps, the noblest tree in our 'British Sylva.'" In all our park and woodland ornamental scenery, whether as a single tree it is intended to stand prominently forward in all its individual beauty and magnificence, or, in combination with other denizens of the forest, to give additional effect by the contrast and tufting of its rich and splendid foliage and the outline of its form, the Chesnut ought to be freely introduced, and with a more liberal hand than appears hitherto to have prevailed. Profit on such occasions ought never to be considered; it is the eye and taste alone that are to be consulted.

The Chesnut is propagated by the nuts, with the exception of the varieties, which, to perpetuate, must be grafted. Well-ripened and the finest nuts ought to be selected; and, as they are a favourite food of mice and other vermin, are best kept over the winter months in dry sand, to preserve their vegetative powers, and not sown till the beginning or middle of March. They may be sown either in drills or in beds, the nuts being covered to the depth of nearly three inches; and in the few trials of raising the Chesnut from seed that we have made, we found that furze cut up into small pieces, and placed both above and below the nuts, was a good preservative against the attacks of the vole and field mice, and did not affect, at least injuriously, the success and growth of the seedlings. From the seed-bed, after a year's growth they should be run into nursery rows, from whence they may be transplanted into their permanent stations in two or three years, for we have found that small plants of three or four years' growth succeed much better than those kept in the nursery till of larger size. After being planted out, we have found it advisable, in case they did not push freely, or remained stunted, crooked, and unsightly, to adopt the method often pursued with the oak, and other kinds of hard wood, viz., to cut them over close by the ground, which almost invariably ensures a straight, strong, healthy shoot from the root. During youth the side shoots sometimes require shortening or cutting in, and now and then a second leader has to be extirpated; but no excessive pruning, like that described by some of our arboriculturists, ought ever to be adopted when beauty and elegance of form are desired.

The amputation of large branches, close by the bole, is also always attended by bad effects, and contributes to the speedier decay of the tree.

From the tufted and weighty nature of the foliage, the brittle quality of the shoots, and the angle formed by the junction of the branches, the Chesnut is liable to be torn and injured by autumnal winds and storms. It is seldom, however, that the foliage is disfigured, as the leaves are eaten by few insects, and the only caterpillar we have seen feeding in any numbers upon the leaves, were those of *Pygæra bucephala* (Buff-tip Moth), and in those instances the attack was confined to plants of twelve or fourteen years' growth. In some seasons, particularly upon the Continent, the embryo fruit is attacked by a kind of weevil, the *Pyrale Pflugione*, Fab., which commits considerable injury, as all the nuts pierced by the insect in depositing its eggs never attain their full size, but drop off before they are half ripe.

Many varieties of the Chesnut, remarkable for the quality of their fruit, either as regards size, flavour, or early ripening, are extensively cultivated, and the kinds continued by grafting.

In France great attention is paid to the cultivation of the Chesnut, and they divide the varieties into two sections, *les chataignes* and *les marrons*, the latter being held in the highest esteem as producing nuts of the largest size, finest flavour, and farinaceous qualities.

In England, also, several varieties have been raised and propagated, such as the Downton, the prolific, Knight's prolific, the Devonshire, Masters's, Canterbury Chesnuts, &c., and Loudon mentions that twenty sorts are cultivated in the London " Hort. Soc." garden. There are also several botanical varieties, such as the Cut-leaved Chesnut, *C. v. asplenifolia*, the Hooded *C. v. cucullata*, the Glossy-leaved *C. v. glabra*, and the Variegated *C. v.*

variegata; all, except it may be the Glabra, inferior to the species in beauty, and not worth cultivating, unless in large arboretums for the sake of the deviation from the type.

In Britain, Chesnut trees of enormous dimensions are recorded, several of which are still in existence. These prove the early period at which the introduction of the species must have taken place; as an instance, we have the famous Tortworth Chesnut already alluded to, and which some suppose may have been planted in the time of the Romans; however this may be, it is certain that in the reign of King John it was known as a boundary tree, and in that of Stephen, was so remarkable for its size as to be called the great Chesnut of Tortworth. It is beautifully figured by Mr. Strutt, in his "Sylva Britannica," and in 1820 its circumference, near the ground, was fifty-two feet. Another very ancient Chesnut is that growing in the park at Cobham, in Kent, called The Four Sisters, also figured by Strutt. Greenwich Park and Kensington Gardens also boast of many ancient hollow and pollard-like Chesnuts. Numerous magnificent and thriving trees are also to be found in various parts of England; amongst others, we may mention one at Nettlecombe, Somersetshire, the seat of Sir John Trevelyan, Bart., which was planted within the recollection of his father, the late Sir J. Trevelyan, who died in 1828. The dimensions of this tree are as follow:—height, sixty feet, circumference of trunk, at four feet from the ground, seventeen feet four inches; the solid contents, three hundred and seventy-three feet, or nine tons thirteen feet. Another tree at the same place, cut down in 1752, had a stem thirty-four feet in length, and which squared six feet six inches. Its solid contents, one thousand four hundred and thirty-six feet. In Sussex, at Cowdray, there is a noble avenue of Chesnut trees, the circumference of whose trunks averages six feet, with a height of forty or fifty feet. At Croft Castle, Herefordshire, many of the Chesnuts which adorn its grounds have attained a magnificent size; the largest is upwards of eighty feet high, with a trunk of nearly nine feet in diameter, and a head upwards of one hundred and twelve feet in diameter.

In the north of England it also attains a large size when planted in a favourable soil. At Belford Hall, in Northumberland, upon a free loam over the Whintrap, at about seventy years old, it is from seventy to eighty feet high, the circumference of the trunk about ten feet.

In Scotland it also appears to have been introduced at an early period, and as Sir T. D. Lauder remarks, "it is found near all the old aristocratical residences of that country." At Ricarton, near to Edinburgh, there is an ancient Chesnut, whose trunk measures upwards of twenty-seven feet in circumference. The celebrated Findhaven Chesnut was also of uncommon bulk, and long accounted the largest tree in Scotland. Sang mentions several large Chesnuts, the least of which was eight feet six inches in circumference, and the largest seventeen. At Inverary, we have often admired the large Chesnuts which grow near to the Duke of Argyle's stables, and which are still thriving and in vigorous condition.

Ireland also is favourable to the growth of the Chesnut, and many fine trees are to be seen in that country. Loudon mentions trees at Bellione which, at the time he wrote, had not been planted more than twenty-seven years, that had trunks of from five to seven feet in circumference at one foot from the ground. At Twizell, about eighteen years planted, it is twenty-eight feet high, and three feet in circumference at the base.

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